

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN**

U.S. WATER SERVICES, INC. and
ROY JOHNSON,

Plaintiffs,

v.

NOVOZYMES A/S and NOVOZYMES NORTH
AMERICA, INC.,

Defendants.

Case No. 3:13-cv-00864-jdp

**NOVOZYMES' RENEWED MOTION UNDER RULE 50(b)
FOR JUDGMENT OF NON-INFRINGEMENT AS A MATTER OF LAW
OR, IN THE ALTERNATIVE, UNDER RULE 59 FOR A NEW TRIAL**

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I. INTRODUCTION

Pursuant to Federal Rule of Civil Procedure 50(b), defendants Novozymes A/S and Novozymes North America, Inc. (collectively, “Novozymes”) seek a judgment of non-infringement as a matter of law.¹ In the alternative, Novozymes moves for a new trial on the issues of induced and contributory infringement under Federal Rule of Civil Procedure 59.

No reasonable jury could have concluded that Novozymes induced fuel ethanol plants to use Phytaflow[®] in a manner that infringes the asserted method claims of the ’137 patent (DTX 2001) and the ’399 patent (DTX 2002). Those claims do not merely require the application of phytase to processing fluid to reduce the formation of phytate deposits; they also require the use of specific operating parameters. Some of the asserted claims require that a plant must operate its beer column at a pH of 4.5 or higher; the remainder require that a plant achieve reduced formation of phytic acid deposits substantially by using phytase, and also that the reduction not be achieved by using an acid with an oxidizer or UV light. Novozymes does not instruct its Phytaflow customers as to these required operating parameters, nor are such parameters within Novozymes’ control. In addition, no reasonable jury could have concluded that Novozymes contributes to any of its customers’ infringement by selling Phytaflow to fuel ethanol plants, given the undisputed evidence that the identical product formulation is also sold for use in animal feed, has other non-infringing uses, and is not especially made or adapted for use to reduce deposits in fuel ethanol plants. Finally, judgment as a matter of law in Novozymes’ favor as to both induced and contributory infringement is further warranted because no reasonable jury

¹ See Dkt. No. 753, Novozymes’ Rule 50(a) Motion for Judgment of Non-Infringement as a Matter of Law; Dkt. No. 795, Novozymes’ Renewed Rule 50(a) Motion for Judgment of Non-Infringement as a Matter of Law.

could have found direct infringement of the asserted claims by all Phytaflow customers, including a number of those specifically identified at trial.

Alternatively, a new trial should be granted on the question of whether Novozymes indirectly infringed the asserted claims because U.S. Water was permitted to rely on pre-issuance evidence and evidence regarding a non-asserted patent to establish Novozymes' alleged intent with respect to infringement of the asserted patents, whereas Novozymes was precluded from explaining this evidence to the jury or offering certain mitigating evidence. The jury thus lacked context that was critical to the issue of Novozymes' intent. A new trial is warranted to correct prejudicial errors in admission and exclusion of evidence.

II. NOVOZYMES IS ENTITLED TO JUDGMENT OF NON-INFRINGEMENT AS A MATTER OF LAW

A. Legal Standard

In resolving a motion for judgment as a matter of law under Rule 50(b), the “court must determine whether the jury had a legally sufficient evidentiary basis for the verdict it reached.” *Douglas Dynamics, LLC v. Buyers Prods. Co.*, 76 F. Supp. 3d 806, 812 (W.D. Wis. 2014); *see also Tate v. Exec. Mgmt. Servs., Inc.*, 546 F.3d 528, 531–33 (7th Cir. 2008) (in reversing district court’s denial of Rule 50(b) motion, observing that a jury verdict will be overturned where no rational jury could have found for the nonmoving party). In so doing, the court must “construe the facts strictly in favor of the party that prevailed at trial, including by drawing all reasonable inferences in that party’s favor and disregarding all evidence favorable to the moving party that the jury is not required to believe.” *Douglas Dynamics*, 76 F. Supp. 3d at 812 (internal quotations and citations omitted). The court “does not make credibility determinations or weigh the evidence,” but “must assure that more than a mere scintilla of evidence supports the verdict.”

Wis. Alumni Research Found. v. Apple, Inc., No. 14-cv-062-wmc, __ F. Supp. 3d __, 2017 WL 2438832, at *2 (W.D. Wis. June 6, 2017) (internal quotation omitted).

B. No Reasonable Jury Could Find that Novozymes Induced Infringement of the Asserted Claims by Phytaflow Customers

Active inducement of patent infringement forms the basis for liability under 35 U.S.C. § 271(b). But the “mere knowledge of possible infringement by others does not amount to inducement; specific intent and action to induce infringement must be proven.” *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1364 (Fed. Cir. 2017). Given the evidence of record, a reasonable jury could not have found Novozymes liable for inducing infringement of the asserted claims by any Phytaflow customer.

1. Novozymes Did Not Encourage Phytaflow Customers to Infringe the Asserted Claims

For Novozymes to be liable for inducing Phytaflow customers to infringe the asserted claims, the evidence “must show” that Novozymes “took an affirmative act to encourage infringement with the knowledge that the induced acts constitute patent infringement.” *Microsoft Corp. v. DataTern, Inc.*, 755 F.3d 899, 904 (Fed. Cir. 2014) (citing *Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 764–66 (2011)). But U.S. Water offered no evidence that Novozymes actively encouraged Phytaflow customers to practice *every* limitation of the asserted method claims, or knew that these customers in fact did so. *See Limelight Networks, Inc. v. Akamai Techs., Inc.*, __ U.S. __, 134 S. Ct. 2111, 2117 (2014) (“A method patent claims a number of steps; under this Court’s case law, the patent is not infringed unless all the steps are carried out.”); *MercExchange, LLC v. eBay, Inc.*, 401 F.3d 1323, 1332–33 (Fed. Cir. 2005) (“Posting goods for sale . . . is relevant to only one limitation of the claims There is no testimony or other record evidence that eBay intended to induce ReturnBuy to incorporate the other limitations of the asserted claims.”), *vacated and remanded on other grounds*, 547 U.S.

388 (2006). Specifically, U.S. Water failed to meet its burden because Novozymes does not instruct its customers to practice specific process limitations of the asserted claims, and has never done so.

The only instructions Novozymes provides its customers for how to use Phytaflow are contained in the product application sheet. DTX 2240; Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 56:25–57:11 (Novozymes staff scientist Steven Schnurrer testifying that the application sheet “is the authorized version of how to use the product”). The Phytaflow application sheet gives only these instructions for use:

Phytaflow provides process benefits associated with reduced fouling in several corn ethanol plant engineering types and sizes. For optimal results, Phytaflow should be started after routine cleaning of exchangers. Phytaflow can only be applied to fermentation tanks. Use of this product may impact corn oil production, especially if dosed at improper concentrations. A Novozymes Technical Solutions scientist will help you determine the optimal enzyme dose to maintain antifouling benefits and corn oil production.

Recommended dose range

0.00045 - 0.0018 % w/w corn as is (1.5 - 2.5 gallons/800,000 gallon fermenter).

DTX 2240 at 002. In sum, Novozymes’ instructions are limited to advising its customers to add Phytaflow to fermentation at a dosage within the recommended range. Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 62:17–63:4 (Kohl); *see also* Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 20:17–21:8 (Rogers). Jack Rogers, the head of marketing operations for Novozymes’ biofuels business, testified that Novozymes’ instructions for Phytaflow use have not changed since it began selling the product. Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 21:9–10, 13. Moreover, on the occasions (described below) where Novozymes has advised customers on pH in connection with use of the separate product Avantec[®], its recommendations have consistently been to operate at pH conditions *lower* than 4.5.

Of critical importance is the lack of any instructions in the Phytaflow application sheet regarding the operating parameters specified by the asserted claims. In particular, some of the asserted claims require that the pH of ethanol processing fluid in the beer column be 4.5 or higher, and the remainder require that phytate deposit reduction be accomplished substantially by phytase, and also that the reduction not be accomplished by an acid in conjunction with an oxidizer.² Yet as admitted by U.S. Water’s technical expert Eric Dorn, nowhere does the Phytaflow application sheet mention pH, let alone instruct customers to employ a pH of 4.5 or higher in the beer column. Similarly, the Phytaflow application sheet does not instruct customers as to the amount of sulfuric acid to use in fuel ethanol production, and whether or not to use an oxidizer.³ *See generally* DTX 2240; Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 13:2–14:2 (Dorn); *see also* Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 64:10–18 (Kohl).

U.S. Water’s expert, Mr. Dorn, contended that the Phytaflow application sheet instructs customers to infringe the asserted claims because it teaches that among Phytaflow’s benefits are “[c]hemical savings” from “[r]educd sulfuric acid at distillation columns and evaporators.” Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 51:23–52:20; *see also* DTX 2240. But the asserted claims do not claim a “reduction in sulfuric acid usage,” nor do they claim anything about “chemical savings.” The claims require either a pH of 4.5 or higher in the beer column, or

² The “pH 4.5 or higher” limitation—which requires that “the pH of the ethanol processing fluid in the beer column is 4.5 or higher during production of ethanol”—appears in all asserted claims of the ’137 patent, and in claims 2, 16, and 18–20 of the ’399 patent. The “substantially by phytase” limitation—which requires that “the reduction in the formation of” phytate deposits during fuel ethanol production “is accomplished substantially without the addition of an acidic compound that can break down organic phosphates and phosphonates into soluble inorganic phosphates in the presence of an oxidizer, oxidizing agent, or ultraviolet light”—appears in asserted claims 1, 5, and 7–9 of the ’399 patent. *See* DTX 2001; DTX 2002.

³ Mr. Rogers testified that upon issuance of the ’137 and ’399 patents, he reviewed the Phytaflow application sheet to confirm that it contained no such instructions. Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 21:15–22:7; *see also infra* § II.B.2.

they require that phytate deposit reduction be accomplished substantially by phytase and also that the reduction not be accomplished by an acid in conjunction with an oxidizer. The portion of the application sheet to which Mr. Dorn refers cannot support a conclusion that Novozymes induces Phytaflow customers to practice the claim limitations.

Further confirming the lack of any such instructions in the Phytaflow application sheet as to pH in the beer column or whether, how, or in what quantities to use sulfuric acid, the plant representatives deposed by U.S. Water confirmed that *they*, not Novozymes, decide the operating parameters for specific steps in fuel ethanol production. Their testimony makes clear that Novozymes does not induce its Phytaflow customers to practice the “pH 4.5 or higher” and “substantially by phytase” limitations, but rather that the plant operators determine both the pH targeted at various steps during fuel ethanol production as well as whether, when, and how much sulfuric acid to add:

- **Aemetis:**

Q. Has Novozymes ever instructed A[e]metis to eliminate the use of acid in its ethanol production process?

A. No.

Q. Who makes decisions about how much sulfuric acid or other acids should be used in A[e]metis’s plant?

A. We do.

Q. Who is ‘we’?

A. The control team, myself, the lab manager, engineer, operations manager.

Q. Has Novozymes or any Novozymes’ employee ever instructed or encouraged A[e]metis as to what pH its beer feed fluid should be when entering the beer column?

A. Not that I am aware of.

Q. Who makes decisions about what pH the fluid should be at . . . that part of the plant?

A. We do not make decisions on what the pH should be going to the beer well. We do not monitor that as a control point.

Dkt. No. 763, Aemetis (Hollis) Dep. Tr. at 118:1–19.

- **Calgren:**

Q. Has Novozymes or any Novozymes representative ever instructed or encouraged Calgren to eliminate the use of sulfuric acid in its process?

A. No, I don't recall that. . . .

Q. Who makes decisions at Calgren about how much sulfuric acid should be used?

A. Well, that's determined by the process. We don't – somebody doesn't say this month we're going to put in 6,000 gallons. We don't do it that way. . . . We decide how we're going to run the plant . . . and then the sulfuric acid use is determined by how accurately we can – how well we go about hitting those parameters.

Q. Does Novozymes ever tell Calgren how to run its plant?

A. It wouldn't dare.

Q. Has any Novozymes representative ever told Calgren that the pH in its beer column should be 4.5 or higher when using a phytase?

A. No.

Q. And if someone from Novozymes had ever said that, how would that instruction be taken? How would that advice be received?

A. Any advice we get from vendors is perhaps of interest if it's backed up by some particular reason But what would they know about pH in a beer column? They wouldn't – we wouldn't – they wouldn't comment on it; we wouldn't listen to it.

Q. And Calgren makes these decisions for itself, in other words?

A. We run our plant, that's correct.

Dkt. No. 764, Calgren (Schlyer) Dep. Tr. at 179:22–182:18.

- **Dakota Ethanol:**

Q. Has Novozymes or a Novozymes' representative ever instructed or encouraged Dakota Ethanol to eliminate the use of acid in its process?

A. No.

Q. Who makes decisions about how much sulfuric acid Dakota Ethanol should use –

A. I do.

Q. – in its plant? Has Novozymes or Novozymes’ representative ever instructed or encouraged Dakota Ethanol as to what pH its processing fluid should be in the beer column?

A. No.

Q. Who makes decisions about pH targets in the Dakota Ethanol plant?

A. I do.

Dkt. No. 761, Dakota Ethanol (Gerry) Dep. Tr. at 165:5–19; *id.* at 139:11–13 (“Q. Did Novozymes ever give you a target for your beer well pH? A. No.”).

- **Nesika Energy:**

Q. And as a plant manager, you are responsible for the way that the plant operates; is that correct?

A. Yes.

Q. Can you explain what decisions you make as the plant operator?

A. Pretty much anything that deals with the operation of the plant. . . .

Q. Would you make decisions relating to sulfuric acid use?

A. Yes.

Q. Would you make decisions relating to pH targets?

A. Yes.

Q. Acceptable pH ranges?

A. Yes.

Dkt. No. 762, Nesika Energy (Reynolds) Dep. Tr. at 105:15–106:8; *id.* at 93:6–9 (“Q. Has Novozymes ever provided instructions in the time period since you became familiar with Nesika’s use of . . . Phytaflow, rather? A. No.”); *id.* at 93:21–94:24 (“Q. In your own communications with Novozymes, have they ever told you anything about how you’re supposed to be using Phytaflow? A. No.”).

- **Southwest Georgia Ethanol:**

Q. Has Novozymes ever instructed or encouraged Southwest Georgia Ethanol to use a pH of 4.5 or higher in the beer column?

A. Not to my recollection.

Q. Has Novozymes ever instructed or encouraged Southwest Georgia Ethanol to eliminate the use of acid in its ethanol production process?

A. Not that I can recount.

Q. . . . Does Southwest Georgia Ethanol continue to use sulfuric acid in addition to using Phytaflow?

A. Yes.

Q. And who decides how much sulfuric acid to use at Southwest Georgia Ethanol?

A. I do.

Q. Who decides the set point of the pH in the beer feed?

A. I do.

Dkt. No. 760, Southwest Georgia Ethanol (Ferman) Dep. Tr. at 196:15–17, 196:19, 200:14–16, 200:19, 200:22–23, 200:25, 201:5–7, 201:11–13.

In light of this testimony, and the absence of any instruction in the Phytaflow application sheet regarding pH in the beer column or whether, how, or in what quantities to use sulfuric acid, no reasonable jury could have found that Novozymes actively induces customers to infringe the asserted claims.

U.S. Water relied on two additional categories of evidence at trial in its attempt to establish that Novozymes induced infringement of the asserted claims: first, communications involving Novozymes' employees recommending that plants use Phytaflow "like pHytOUT," and second, Novozymes' guidance for managing Avantec-related fouling. The first category is legally irrelevant, and the second category contradicts U.S. Water's own contentions regarding inducement.

With respect to U.S. Water's assertion that "Novozymes instructed its customers to use their Phytaflow product in exactly the same way those customers had used U.S. Water's pHytOUT product," the evidence U.S. Water contends supports its claim largely pre-dates

issuance of the asserted patent claims.⁴ Dkt. No. 814, Trial Tr. (Oct. 10, 2017 p.m.) at 30:21–32:16 (U.S. Water’s opening statement citing PTX 69, PTX 158); Dkt. No. 826, Trial Tr. (Oct. 18, 2017 a.m.) at 36:18–43:24 (U.S. Water’s closing statement citing PTX 12, PTX 64, PTX 69, PTX 86, PTX 87, PTX 144,⁵ PTX 158); *see also* PTX 88. As a matter of law, Novozymes’ actions prior to issuance of the patents asserted in this action cannot be used to establish inducement.⁶ *See Nat’l Presto Indus., Inc. v. W. Bend Co.*, 76 F.3d 1185, 1196 (Fed. Cir. 1996) (“We conclude that . . . as a matter of law § 271(b) does not reach actions taken before issuance of the adverse patent.”); *Health Grades, Inc. v. MDX Med., Inc.*, No. 11-CV-00520-RM-BNB, 2014 WL 5762002, at *4 (D. Colo. Nov. 4, 2014) (“[A]s a matter of law there cannot be inducement or intent to induce if there is no patent at the time of the alleged inducement.”); *see also State Indus., Inc. v. A.O. Smith Corp.*, 751 F.2d 1226, 1236 (Fed. Cir. 1985) (observing not only that “[f]iling an application is no guarantee any patent will issue and a very substantial percentage of applications never result in patents,” but also that “[w]hat the scope of claims in patents that do issue will be is something totally unforeseeable”).

But even setting aside the question of when such communications occurred, U.S. Water did not introduce any evidence at trial that telling a customer to use Phytaflow like pHytOUT, or stating to a prior pHytOUT user that they likely know how to use Phytaflow, is equivalent to an instruction to practice all limitations of the asserted claims. *See, e.g.*, PTX 189 (“I have a strong suspicion you know exactly how to use it.”). Such a communication may amount to no more

⁴ The ’137 patent issued on April 9, 2013. DTX 2001. The ’399 patent issued on December 17, 2013. DTX 2002.

⁵ U.S. Water referred to PTX 144, which is identical in relevant part to PTX 88, in both its opening and closing statements. Of these two exhibits, only PTX 88 was admitted into evidence. U.S. Water later clarified its error, and only PTX 88 was provided to the jury during deliberations. Dkt. No. 826, Trial Tr. (Oct. 18, 2017 a.m.) at 135:5–136:5.

⁶ Novozymes also moves for a new trial pursuant to Rule 59 based on the admission of such evidence pre-dating issuance of the asserted patents. *See infra* § III.B.

than informing a customer that Phytaflow should be added during fermentation to reduce formation of phytate deposits. U.S. Water introduced no evidence that it instructs pHytOUT customers to maintain a pH in the beer column of at least 4.5. Nor did U.S. Water introduce any evidence that it instructs customers to ensure that any deposit reduction is accomplished substantially by phytase, and that they not also use sulfuric acid in combination with an oxidizer to assist with deposit reduction. As for dosage, it was undisputed at trial that suggesting that a customer use the same amount of Phytaflow as they had used of pHytOUT (whether by weight or volume) could not be an implicit instruction to dose Phytaflow in a manner equivalent to pHytOUT because the activities and concentrations of the phytase enzymes in the two products differed significantly. *See, e.g.*, PTX 312 (“They can just dose the same lbs of Phytaflow as Phytout.”); Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 68:2–70:1 (Dr. Kohl testifying that pHytOUT XP is one-tenth the concentration of Phytaflow and Ronozyme P-(L)); *id.* at 160:3–162:14 (Mr. Bly confirming that Ronozyme P-(L) constitutes 8.5 percent of pHytOUT XP); DTX 2427.

Novozymes’ instructions to its customers regarding how to use Avantec also do not support a conclusion that Novozymes induced infringement of the asserted claims. If anything, these instructions demonstrate a lack of inducement. Avantec is a Novozymes product containing an alpha-amylase, a glucoamylase, and a protease; it does not contain a phytase. Dkt. No. 804, Rogers Dep. Tr. at 37:22–24. Use of Avantec was found in some cases to result in an increase of “all types of fouling.” Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 64:18–19, 64:22–65:2 (Schnurrer).

To address this Avantec-related fouling, Novozymes recommended that plants experiencing this problem *lower* their beer feed pH *and*, to the extent that Avantec *displaced a*

phytase-containing alpha-amylase blend,⁷ also add a separate phytase. *See, e.g.*, Dkt. No. 755, Whitlock Dep. Tr. at 75:22–76:4, 76:5–13 (Novozymes’ bioenergy technical services manager explaining that where Avantec displaced a phytase-containing alpha-amylase blend, it was recommended that such plants also use a stand-alone phytase “so that phytase was not removed from the process as an [unintended] side-effect [of] switching to Avantec”); PTX 591 (“As a generality, a pH target in the beer feed of 4.5 will be sufficient to prevent most fouling. If fouling persists, step towards 4.1.”); DTX 2839 at 013–014 (internal Novozymes presentation by Mr. Schnurrer recommending sulfuric acid addition as “key to managing both Phytaflow and Avantec”); Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 54:23–56:24 (Mr. Schnurrer testifying about DTX 2839, and explaining that he recommended sulfuric acid addition and a beer feed pH below 4.5 for Phytaflow users). For example, Novozymes’ technical representative to Southwest Georgia Ethanol recommended during the plant’s Avantec trial that it target a beer pH in the range of 4.0–4.2. DTX 2825 at 004 (“Beer within, or near, a pH range of 4.0–4.2 in conjunction with Phytaflow® is believed to be the sweet spot for protein precipitation as a means to suppress onset of protein fouling in evaps.”); Dkt. No. 760, Southwest Georgia Ethanol (Ferman) Dep. Tr. at 198:21–200:12 (“Q. Did you understand Mr. Dancy [in DTX 2825] to be suggesting that you use a pH range of 4.0 to 4.2 with Phytaflow? A. Yes.”). Similarly, a representative of Kansas Ethanol testified that while using Phytaflow, the plant began adding sulfuric acid into its beer feed during a trial of Avantec—the opposite of what U.S. Water contends its claims require. Dkt. No. 759, Kansas Ethanol (Combs) Dep. Tr. at 22:24–24:1. In any event, with the exception of these two plants (Southwest Georgia Ethanol and Kansas Ethanol), U.S. Water failed to introduce any evidence at trial regarding which Phytaflow customers also used Avantec *and*

⁷ Such products included, for example, DuPont’s Spezyme RSL or Distillase SSF+ products. *See* PTX 591 at NZ-USW00003004.

received advice from Novozymes about whether and how to control any of the process conditions that are limitations of the asserted claims.

2. Novozymes Did Not Possess the Requisite Intent to Induce Infringement by Phytaflow Customers

Inducement liability also requires the evidence to show that Novozymes possessed the requisite intent to induce infringement of the asserted claims by its Phytaflow customers. Mere knowledge of the acts alleged to constitute infringement is not enough; rather, liability requires “that the alleged infringer knowingly induced infringement and possessed specific intent to encourage another’s infringement.” *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1306 (Fed. Cir. 2006) (en banc in relevant part) (quotation omitted).

Here, not only did Novozymes provide no instruction to its Phytaflow customers as to all limitations of the asserted claims, but it also did not intend to encourage infringement by those customers. Mr. Rogers testified that upon issuance of the ’137 and ’399 patents, he reviewed the Phytaflow application sheet to confirm that it contained no such instructions. Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 21:15–22:1. His goal in doing so was “to make sure that we weren’t recommending any practices that could put our customers at risk for violating” U.S. Water’s patents. *Id.* He concluded that Novozymes did not in fact recommend any such practices because “we were not making any recommendations for targeting pH in the beer column, and we were not recommending that sulfuric acid be eliminated from the process.” *Id.* at 22:2–10, 22:14–21, 22:24–23:2. Accordingly, no reasonable jury could find that Novozymes actively induced infringement or intended to do so.

C. U.S. Water Has Not Proved that Novozymes Contributes to Infringement of the Asserted Claims Under 35 U.S.C. § 271(c)

U.S. Water also failed to prove that Novozymes contributes to infringement of the asserted claims. Contributory infringement effectively requires that an article be “good for

nothing else” but infringement. *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.* (“*Grokster*”), 545 U.S. 913, 932 (2005). In particular, as codified by U.S.C. § 271(c), contributory infringement occurs if a party sells or offers to sell (i) “a material or apparatus for use in practicing a patented process,” (ii) “constituting a material part of the invention,” (iii) “knowing the same to be especially made or especially adapted for use in an infringement of such patent,” and (iv) “not a staple article or commodity of commerce suitable for substantial noninfringing use.” 35 U.S.C. § 271(c); *see also In re Bill of Lading Transmission & Processing Sys. Patent Litig.*, 681 F.3d 1323, 1337 (Fed. Cir. 2012). Here, however, no reasonable jury could find based on the evidence of record that Novozymes’ accused phytase formulation is not a staple article having substantial non-infringing uses, nor that this formulation is especially made or adapted for use in the method of the asserted claims.

It is undisputed that phytase—i.e., the enzyme itself—is a staple article of commerce.⁸ But the question of whether Novozymes contributes to any customer’s infringement is different, as the concern of § 271(c) is “the material actually sold by the accused and the uses made of it by its purchasers.” *Hodosh v. Block Drug Co.*, 833 F.2d 1575, 1578–80 (Fed. Cir. 1987) (holding that for method claim requiring application of a toothpaste containing potassium nitrate, the toothpaste—not the potassium nitrate ingredient—is the proper focus of the analysis). The “material” at issue here is not merely the phytase component of Phytaflow, but rather the

⁸ For example, the specification of U.S. Water’s asserted patents identifies at least three prior art uses of phytase that are substantial and non-infringing, including (1) increasing the bioavailability of phosphorus to livestock in distiller’s grains; (2) increasing bioavailability of phosphorus to yeast in fuel ethanol production processes; and (3) improving the activity of alpha-amylase in fuel ethanol production processes. DTX 2001 at 5:45–50; Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 25:12–18 (“Q. [to Mr. Dorn] And so you don’t contest the fact that phytases like Novozymes’ Ronozyme P had noninfringing uses outside of fuel ethanol and even within fuel ethanol, correct? A. Right. . . .”); *see also* Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 66:15–67:19 (Dr. Kohl discussing substantial non-infringing uses for phytase as described in the asserted patent).

phytase-containing formulation sold by Novozymes for control of deposit formation in fuel ethanol production plants.

The evidence at trial was undisputed that Novozymes has been selling the *identical* formulation used in Phytaflow to animal feed producers under the brand name Ronozyme P-(L)[®] since 2007. Dkt. No. 823, Trial Tr. (Oct. 13, 2017 a.m.) at 73:1–10 (Halling); *id.* at 112:18–24 (Faller); *id.* at 145:4–9, 145:12–17, 146:1–10 (Rogers); Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 69:12–18 (Dr. Kohl testifying that “Ronozyme P is a Phytaflow product with a different label on the bucket.”). They are the same product with all of the same ingredients and components at the same concentrations. Dkt. No. 830, Trial Tr. (Oct. 16, 2017 a.m.) at 65:2–9 (Dr. Kohl explaining that “the Ronozyme P material is the identical material that is Phytaflow. It’s the same.”); *see also* Dkt. No. 824, Trial Tr. (Oct. 16 p.m.) at 118:11–15 (Kohl). Because the phytase formulation sold as Phytaflow and Ronozyme P-(L) is equally suited for use, at least, in animal feed to reduce phytic acid content as it is for use in fuel ethanol plants to reduce deposit formation, as a matter of law, this formulation is a staple article of commerce suitable for substantial non-infringing use. And for the same reason, the Phytaflow / Ronozyme P-(L) phytase formulation, as a matter of law, cannot be “especially made or especially adapted for use in an infringement” of U.S. Water’s patents.

In addition, as a matter of law, any Phytaflow use by a customer operating at a pH below 4.5 in the beer column is a substantial non-infringing use. As Mr. Dorn admitted, plants can and do choose to operate with a pH below 4.5 while using Phytaflow, as evident even in the limited plant data submitted by U.S. Water. PTX 884; PTX 881; Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 17:9–18:3, 18:10–20 (Dorn). Moreover, plants also can and do choose to use Phytaflow in combination with other techniques for reducing the formation of deposits, including the

application of sulfuric acid with an oxidizer. Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 59:10–23, 60:18–20, 61:13–15 (Dorn); Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 14:3–6, 16:20–17:1 (Dorn). Such uses are, of course, other non-infringing uses of the same phytase formulation that U.S. Water accuses.

U.S. Water did not present any evidence that these non-infringing uses are insubstantial, unusual, or impractical. *See In re Bill of Lading*, 681 F.3d at 1338. Instead, U.S. Water contends that Phytaflow does not qualify as a “staple article” because Phytaflow itself is not *marketed* for a purpose other than deposit control and Novozymes’ customers do not use it for any other purpose.⁹ *See, e.g.*, Dkt. No. 826, Trial Tr. (Oct. 18, 2017 a.m.) at 56:6–57:15 (U.S. Water’s counsel arguing in closing that “[n]obody from Novozymes got up and said Phytaflow has been sold for any purpose other than to reduce deposits” and that “[t]here is zero evidence that Phytaflow has ever been sold or offered to sell or advertised to do anything other than that”). U.S. Water misapprehends the law of contributory infringement.

As an initial matter, a “staple article” under § 271(c) is an article having a substantial non-infringing use; there are not two separate requirements. *See In re Bill of Lading*, 681 F.3d at 1337 (describing contributory infringement as requiring that the accused “material or apparatus” have “no substantial non-infringing uses” without mention of a separate staple article requirement); *C.R. Bard, Inc. v. Advanced Cardiovascular Sys., Inc.*, 911 F.2d 670, 673–75 (Fed. Cir. 1990) (in determining whether accused product is a staple article, considering only whether it has substantial non-infringing uses or whether it “has no use except through practice of the patented method” (quotation omitted)); *Kudlacek v. DBC, Inc.*, 115 F. Supp. 2d 996, 1071 (N.D. Iowa 2000) (observing that “a component is ‘not a staple article of commerce’ if it ‘has no use

⁹ U.S. Water concedes that phytase itself is a staple article.

except through practice of the patented method,’ whereas ‘substantial non-infringing uses’ establish that something is ‘a staple article of commerce’” (quoting *C.R. Bard*, 911 F.2d at 674)); *Universal Elecs., Inc. v. Zenith Elecs. Corp.*, 846 F. Supp. 641, 652 (N.D. Ill. 1994) (“It seems clear from *C.R. Bard* that the Court must decide if Universal’s remote control units have any non-infringing uses. If they do, those transmitters are staple articles and Universal cannot be liable for contributory infringement by selling them.”); *see also Pollock v. Thunderline-Z, Inc.*, No. 98–1191, 215 F.3d 1351, 1999 WL 710262, at *4 (Fed. Cir. Sept. 1, 1999) (unpublished) (“To establish that an article is a staple, Thunderline-Z must prove that there are substantial, non-infringing uses.”); *Preemption Devices, Inc. v. Minn. Mining & Mfg. Co.*, 803 F.2d 1170, 1174 (Fed. Cir. 1986) (“The District Court expressly found that the PSO–1 selector had no substantial noninfringing use which therefore made it a non-staple article. This finding was certainly not clearly erroneous.”); *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661, 667–68 (Fed. Cir. 1986) (holding that appellant “failed to establish on this certified appeal that the district court was clearly erroneous in finding that the machine as leased was suitable for substantial non-infringing use and therefore a staple article of commerce”).

Moreover, in focusing on how Phytaflow is marketed, rather than on the uses to which Phytaflow may actually be applied, U.S. Water conflates the elements of inducement with those of contributory infringement. Specifically, U.S. Water confuses “contributory infringement” as codified in § 271(c) in the 1952 Patent Act with “contributory infringement” under traditional common law principles. As the Federal Circuit has explained, prior to the 1952 Patent Act, patent infringement was judicially divided into two categories, direct infringement and contributory infringement. The latter included any activity other than direct infringement “where, although not technically making, using, or selling, the defendant displayed sufficient

culpability to be held liable as an infringer,” and thus generally corresponds to what is today broadly known as indirect infringement. *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1357–58 (Fed. Cir. 2007). In 1952, Congress divided that traditional concept of “contributory infringement” into two separate categories, effectively distinguishing inducement from contributory infringement:

The 1952 Act did not make a substantive change in the law of contributory infringement, but it divided the judicially created category of contributory infringement into two statutory subsections, section 271(b) (inducement of infringement) and section 271(c) (contributory infringement). The most common type of pre-1952 contributory infringement cases were those in which “a seller would sell a component that was not covered by the claims of a patent but which had no other use except the claimed product or process.” That form of contributory infringement was codified in section 271(c).

Id. at 1358 (quoting *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469 (Fed. Cir. 1990)); *see also Global-Tech*, 563 U.S. at 761 (“Before 1952, both the conduct now covered by § 271(b) (induced infringement) and the conduct now addressed by § 271(c) (sale of a component of a patented invention) were viewed as falling within the overarching concept of ‘contributory infringement.’”); *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 692 F.3d 1301, 1309 (Fed. Cir. 2012) (“Prior to the 1952 [Patent] Act, inducement and contributory infringement were both referred to under the rubric of contributory infringement.” (citing *Giles S. Rich, Infringement Under Section 271*, 21 Geo. Wash. L. Rev. 521, 537 (1953))), *rev’d on other grounds*, 134 S. Ct. 2111 (2014).

Following the 1952 Patent Act, a defendant does not contribute to infringement by marketing a staple article for only one of its many uses. Such conduct *may* constitute inducement of infringement under § 271(b), but it is not contributory infringement under § 271(c). Indeed, the Supreme Court carefully distinguished contributory liability from inducement liability in *Grokster* in considering whether to extend inducement liability to the

copyright context.¹⁰ The Court first explained that as codified in patent law, the statutory doctrine of contributory infringement reflects the judgment that “where an article is good for nothing else but infringement, there is no legitimate public interest in its unlicensed availability, and there is no injustice in presuming or imputing an intent to infringe.” *Grokster*, 545 U.S. at 932 (internal quotation and citation omitted). Conversely, therefore, “the doctrine absolves the equivocal conduct of selling an item with substantial lawful as well as unlawful uses.” *Id.* But where evidence “shows statements or actions directed to promoting infringement” of another’s patent, inducement liability applies:

The classic case of direct evidence of unlawful purpose occurs when one *induces commission of infringement by another*, or entices or persuades another to infringe, as by advertising. Thus at common law a copyright or patent defendant who *not only expected but invoked infringing use by advertisement* was liable for infringement on principles recognized in every part of the law.

The rule on inducement of infringement as developed in the early cases is no different today. Evidence of active steps taken to encourage direct infringement, *such as advertising an infringing use or instructing how to engage in an infringing use*, show an affirmative intent that the product be used to infringe, and a showing that infringement was encouraged overcomes *the law’s reluctance to find liability when a defendant merely sells a commercial product suitable for some lawful use*.

Id. at 935–36 (internal quotations, citations, and modifications omitted; emphases added).

That the manner in which a product is marketed is relevant to liability for inducement but not contributory infringement is also reflected in recent decisions of the Federal Circuit and other district courts that have considered similar questions under § 271(c). For example, in *In re Bill of Lading*, the Federal Circuit held that the patentee’s contributory infringement claims could not

¹⁰ It is particularly telling that the Supreme Court in *Grokster* remanded on a theory of induced, not contributory, liability. 545 U.S. at 941. The underlying complaint alleged that the defendants’ file-sharing software resulted in widespread infringement of copyrighted works by individual consumers. *Id.* at 919–21. Although the software could be used for non-infringing purposes, the Court noted ample evidence in the record that the defendants had “communicated an inducing message to their software users.” *Id.* at 937–40.

survive a Rule 12(b)(6) motion to dismiss because the patentee had not adequately pleaded that “the components sold or offered for sale have no substantial non-infringing uses.” 681 F.3d at 1337–38. The patentee argued that the accused products had been marketed in a particular (and allegedly infringing) way, but the Federal Circuit rejected that argument because the marketing-related allegations “say nothing more than ‘if you use this device to perform the patented method, the device will infringe and has no noninfringing uses.’” *Id.* at 1338 (“Where the product is equally capable of, and interchangeably capable of both infringing and substantial non-infringing uses, a claim for contributory infringement does not lie.”). By comparison, the Federal Circuit allowed the patentee’s *inducement* claims based on the marketing-related allegations. *Id.* at 1341 (allowing claims against defendant DriverTech based on “advertising”), 1342 (same for defendant ACS), 1343 (same for defendant PeopleNet), 1344 (same for defendant Intermec), 1345 (same for defendant Microdea), 1345–46 (same for defendant Qualcomm).

Similarly, in *Tyco Healthcare Group LP v. Biolitec, Inc.*, the district court granted summary judgment of no contributory infringement where the patentee conceded that the articles sold—laser fibers for use in medical procedures—were capable of substantial non-infringing uses, but allegedly marketed by the defendant for an infringing use. No. C-08-3129 MMC, 2010 WL 3185497, at *4–5 (N.D. Cal. Aug. 11, 2010) (noting patentee’s contention that defendant “targets” vein doctors who “only use laser fibers for infringing endovenous ablation procedures”). This argument is very similar to the one U.S. Water made at trial—i.e., that Novozymes markets the accused formulation to fuel ethanol production plants and the plants use the formulation to reduce the formation of phytic acid deposits. The *Tyco* court rejected this argument:

The evidence on which [the patentee] relies may be relevant to establishing a claim of inducement pursuant to 35 U.S.C. § 271(b). *See Grokster*, 545 U.S. at 936–37 (describing “inducement rule” in patent law as “one who distributes a device with the object of promoting its use to infringe ... is liable for the resulting acts of infringement by third parties”); *Hewlett Packard*, 909 F.2d at 1469 (noting scope of activities prohibited by § 271(b) is “much broader” than scope prohibited by § 271(c)). [The patentee], however, cites no case, and the Court has located none, holding that where a defendant sells a “staple article,” *see* 35 U.S.C. § 271(c), to a narrow clientele which, in turn, does not use the product to engage in noninfringing activities, the defendant has engaged in contributory infringement.

Id. at *5.

In both *Tyco* and *In re Bill of Lading*, no theory of contributory infringement could succeed because the articles sold were *capable* of substantial non-infringing use. The advertising and “actual use” evidence presented by the patentee was directed to inducement, not contributory infringement. Likewise in this case, it is undisputed that the accused Phytaflow / Ronozyme P-(L) enzyme formulation is suitable for substantial non-infringing uses. Accordingly, no reasonable jury could have concluded that Novozymes is liable for contributory infringement.

D. No Reasonable Jury Could Have Found that Novozymes’ Phytaflow Customers Directly Infringe the Asserted Claims

Direct infringement is a required element of both induced and contributory infringement. *In re Bill of Lading*, 681 F.3d at 1332–33 (“It is axiomatic that ‘[t]here can be no inducement or contributory infringement without an underlying act of direct infringement.’” (quoting *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1326 (Fed. Cir. 2004))). Although none of Novozymes’ Phytaflow customers was a named plaintiff in this litigation, the jury found, as a predicate to liability for indirect infringement by Novozymes, that all Phytaflow customers directly infringe claims 1, 5, and 7–9 of the ’399 patent, and that eight Phytaflow customers directly infringe all asserted claims of the ’137 patent and claims 2, 16, and 18–20 of the ’399 patent. But to prove such direct infringement, U.S. Water was required to show that

Novozymes' Phytaflow customers practice every limitation of the asserted method claims. *See Limelight*, 134 S. Ct. at 2117. Such evidence had to establish either "specific instances of direct infringement" by Novozymes' Phytaflow customers, or "that the accused [method] necessarily infringes" the asserted claims. *See ACCO Brands, Inc. v. ABA Locks Mfrs. Co.*, 501 F.3d 1307, 1313 (Fed. Cir. 2007).

U.S. Water did not establish that Phytaflow use by all Novozymes' customers always or necessarily infringes all asserted claims. *See id.* ("Because the accused device can be used at any given time in a noninfringing manner, the accused device does not necessarily infringe the [asserted] patent."). To the contrary, U.S. Water's evidence showed that Phytaflow can be used in conjunction with a pH in the beer column lower than 4.5, and that Phytaflow can be used in combination with an acid and oxidizer, or other techniques, to reduce deposits.

U.S. Water chose to limit its evidence of Phytaflow usage and associated operating parameters to data gathered from only eight fuel ethanol plants. For the asserted claims that include the "pH 4.5 or higher" limitation, U.S. Water's infringement claims were limited to those eight plants. For the asserted claims that include the "substantially by phytase" limitation, U.S. Water claimed that these eight customers were representative of all Novozymes' Phytaflow customers. But in light of the evidence introduced (or not introduced) at trial, no reasonable jury could have found direct infringement of all asserted claims by each of the eight Novozymes Phytaflow customers identified at trial, and no reasonable jury could have found direct infringement of the "substantially by phytase" claims by any of Novozymes' Phytaflow customers.¹¹

¹¹ During trial, U.S. Water withdrew its assertion that these other customers infringe the asserted claims requiring a pH of 4.5 or higher in the beer column (claims 1, 6, and 12 of the '137 patent, and claims 2, 15, and 18–20 of the '399 patent).

1. U.S. Water Introduced No Evidence that the Unnamed Plants Directly Infringe the “Substantially by Phytase” Claims, or that the Named Plants Are “Representative”

Based on evidence from eight fuel ethanol plants that have used Phytaflow, U.S. Water argued to the jury that all of Novozymes’ fuel ethanol customers directly infringe the “substantially by phytase” claims. But U.S. Water failed to show that the eight named plants are representative of all Phytaflow users, and offered no evidence of infringement for the remaining plants. On this record, no reasonable jury could have found that the unnamed plants directly infringe.

a. U.S. Water Introduced No Evidence that the Named Plants Are Representative of All Phytaflow Customers

U.S. Water’s evidence of direct infringement was limited to eight fuel ethanol plants.¹² Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 43:16–18 (Dorn); Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 8:7–20 (Dorn). Neither U.S. Water’s technical expert, Mr. Dorn, nor any other witness ever testified that the eight named plants are “representative” of other Phytaflow customers. To the contrary, Mr. Dorn admitted that he did not select the eight plants he considered, and that he had no knowledge of how they were chosen. Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 23:20–24:1.

Absent a showing that the eight named plants are representative of all Novozymes’ Phytaflow customers, the jury was not free to assume direct infringement by other plants for which no evidence of infringement was offered. *See ACCO Brands*, 501 F.3d at 1312–13 (in reversing district court’s judgment of induced infringement, finding insufficient evidence of the “threshold requirement of direct infringement” where “the record contains no evidence of actual

¹² The eight plants are: Aemetis; Calgren Renewable Fuels; Dakota Ethanol; Glacial Lakes Energy – Mina (“GLEM”); Glacial Lakes Energy – Watertown (“GLEW”); Kansas Ethanol; Nesika Energy; and Southwest Georgia Ethanol (“SWGE,” now Flint Hills Resources – Camilla).

users having operated the [accused product] in an infringing manner” and expert testimony inferring infringing use was undermined by evidence that “the accused device can be used at any given time in a noninfringing manner”). As the evidence showed, fuel ethanol plants are not like computer programs that operate the same way for each user. While the plants share some similarities—e.g., they all implement process steps corresponding to liquefaction, saccharification, fermentation, and distillation—they differ not only in design but also in certain operating parameters. *See* Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 41:4–16 (Dorn) (observing that plant design differences can be “pretty significant”); *id.* at 74:21–75:4 (Dorn) (“[A]ll plants to some extent work different. There’s different water There’s different corn. You can even have different operations week to week and month to month.”); *see also infra* at 32–33.

In particular, although it is true that all plants that use phytase in fermentation experience a reduction in the formation of phytate deposits, the choice of operating parameters—such as the pH of the beer column and the use of sulfuric acid or other techniques to assist with deposit reduction—ultimately depends on numerous factors unique to each plant. Novozymes’ expert Dr. Kohl explained, without contradiction, that plants choose operating parameters “based on a number of variables that they have to control or outcomes they want to achieve.” Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 64:19–65:7; *see also* Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 18:18–20 (Mr. Dorn explaining that for operating parameters such as pH, “[a] plant would certainly have the authority and flexibility to run at whatever they thought that was best for their operations”). Such variables may include anything from the decision to add or switch enzymes or other process ingredients, to the need to control bacterial contamination. Dkt. No. 824 Trial Tr. (Oct. 16, 2017 p.m.) at 65:17–66:6 (Kohl).

In the face of this extensive evidence of variability among fuel ethanol plants, U.S. Water introduced no evidence that the eight named plants are in any way representative of all Phytaflow customers with respect to the “substantially by phytase” limitation.

b. U.S. Water Introduced No Evidence of Direct Infringement for the Unnamed Plants

U.S. Water nonetheless accused all Phytaflow customers, not just the eight named plants, of infringing the asserted claims containing the “substantially by phytase” limitation. At trial, however, Mr. Dorn admitted that he had no data whatsoever regarding whether and how any plants other than the eight named plants used sulfuric acid. Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 24:2–12. That lack of evidence is particularly troubling in light of U.S. Water’s explicit concession that “[w]hether, where and how much sulfuric acid” is added “varies from plant to plant.” Specifically, U.S. Water admitted that

fuel ethanol plant operators, based on their specific plant operating needs and procedures, may add sulfuric acid at one or more specific points in the process to lower the pH of the ethanol processing fluid to a desired level. Whether, where and how much sulfuric acid to add at any particular point in the process varies from plant to plant and can depend on numerous factors that are specific to a particular plant, including the plant design, the specific compositions and ingredients of its ethanol processing fluid, and its operating procedures, including, e.g., whether the plant operator is using phytase additive to reduce the formation of insoluble deposits of phytic acid and/or salts of phytic acid.

DTX 2151 at 028 (U.S. Water’s response to Request for Admission No. 34); *see also id.* at 029 (U.S. Water’s response to Request for Admission No. 35) (similarly admitting that “[w]hether, where and how much to vary pH”—which necessarily decreases with increasing sulfuric acid usage—“varies from plant to plant”); Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 163:1–165:20 (U.S. Water’s former CEO Allan Bly agreeing that these responses are correct).

Given U.S. Water’s admission of plant variability as to sulfuric acid usage, it cannot be assumed that every plant that enjoys reduced formation of phytate deposits will also meet the

“substantially by phytase” limitation. Rather, U.S. Water needed to submit specific evidence for each plant to prove infringement. *See ACCO Brands*, 501 F.3d at 1313. It did not do so.

Nor can direct infringement by unnamed Novozymes’ Phytaflow customers be otherwise inferred from circumstantial evidence, for the simple reason that Phytaflow is capable of being used in a non-infringing manner, and Novozymes does not instruct otherwise. *Cf. Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1364–66 (Fed. Cir. 2012) (in reversing summary judgment of no inducement, noting that there was sufficient circumstantial evidence of direct infringement because non-infringing modes of use ran counter to the alleged inducer’s instructions); *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1317–19 (Fed. Cir. 2009) (finding circumstantial evidence sufficient to permit the jury to find direct infringement where use of software feature would necessarily infringe the asserted claims). Mr. Dorn pointed to the Phytaflow application sheet—which contains Novozymes’ only instructions to its Phytaflow customers—as supporting his opinion that all Phytaflow users directly infringe claims 1, 5, and 7–9 of the ’399 patent (i.e., those asserted claims containing the “substantially by phytase” limitation). Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 74:1–12; DTX 2240. But as explained above, *see supra* at 5–6, Mr. Dorn also admitted that the Phytaflow application sheet does not instruct or require users to achieve reduction of phytate deposit formation substantially by use of a phytase. Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 13:2–14:2; *see also* Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 64:10–18 (Kohl). To the contrary, data from the named plants demonstrates that Phytaflow can be and has been used to reduce phytate deposit formation in a non-infringing manner. Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 17:9–18:3, 18:10–20 (Dorn); PTX 881; PTX 884. Thus, while Phytaflow *could* be used by other Novozymes customers in an infringing manner, U.S. Water introduced no evidence that these plants *actually do so*.

Accordingly, no reasonable jury could find that any of the unnamed Novozymes' Phytaflow customers directly infringe the asserted claims of the '399 patent that contain the "substantially by phytase" limitation.

2. U.S. Water Has Not Proved Direct Infringement by All of the Named Plants

As to the "substantially by phytase" claims, U.S. Water did not introduce evidence for *any* of the eight plants demonstrating that deposit reduction is accomplished substantially by phytase, and further that such reduction is not accomplished by addition of an acid with an oxidizer. As to the "pH 4.5 or higher claims," while U.S. Water may have introduced evidence of *de minimis* infringement by *some* of the eight named plants for a limited period of time, it failed to do so for at least Calgren, Kansas Ethanol, Dakota Ethanol, or GLEM for the reasons detailed below.

a. None of the Named Plants Meets the "Substantially by Phytase" Limitation

The "substantially by phytase" limitation appears in asserted claims 1, 5, and 7–9 of the '399 patent. DTX 2002. The Court construed this phrase to mean that "deposit reduction is accomplished *substantially by phytase* and *not by the addition of an acid compound with an oxidizer or with ultraviolet light*. But the term does not preclude all use of acidic compounds in ethanol processing." Dkt. No. 561, Summary Judgment Order at 16 (emphases added). The jury was instructed accordingly. Dkt. No. 803, Post-Trial Jury Instructions at 6.

U.S. Water did not introduce evidence showing that *any* of the eight plants accomplish reduced formation of phytate deposits substantially by phytase. Mr. Dorn opined that this limitation is satisfied by use of Phytaflow on the basis that "you add it, and the fouling is reduced, and they have a benefit." Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 49:3–8. He added only:

So if a plant is able to use pHyTOUT or use Phytaflow and able to reduce the amount of sulfuric acid that they're putting in the beer well or the beer feed line specifically to help with their fouling issues, it's pretty obvious that the reason why that's happening is that the phytase is working and it's reducing the deposit. It's really not very difficult.

Id. at 59:4–9. But while Mr. Dorn's testimony establishes that Phytaflow successfully reduces deposit formation, it does not address, let alone establish, that deposit reduction for those Novozymes' customers using Phytaflow is *substantially accomplished by phytase*, and not some other technique or operation. Nor does it establish that deposit reduction is not accomplished, at least in part, by the addition of sulfuric acid and an oxidizer. Mr. Dorn merely *assumed* what U.S. Water was *required to prove*.

First, Mr. Dorn admitted that of the four named plants for which he had sulfuric acid usage data, all four continue to use substantial amounts of sulfuric acid, specifically, *between one and eight tons per day*. Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 18:21–20:9, 22:10–24, 23:4–18; *see also* PTX 883 (Calgren); PTX 889 (Kansas Ethanol); PTX 892 (SWGE); PTX 885 (GLEM); Dkt. No. 759, Kansas Ethanol (Combs) Dep. Tr. at 55:19–56:2, 111:4–6, 111:9–12, 132:24–133:23; Dkt. No. 764, Calgren (Schlyer) Dep. Tr. at 45:14–21. Yet U.S. Water introduced no evidence that these plants' daily addition of literal tons of sulfuric acid to fuel ethanol production did not substantially contribute to reduced formation of phytate deposits. Mr. Dorn also admitted that his opinion was not based on any data regarding sulfuric acid usage by the remaining four named plants—Aemetis, Dakota Ethanol, GLEW, and Nesika—and that he could not provide testimony regarding the amount or purpose of sulfuric acid use by these plants.¹³ Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 20:10–21:6, 22:25–23:2. Given that the

¹³ In fact, the record shows that at least Aemetis, Dakota Ethanol, and Nesika continued to add sulfuric acid in substantial quantities to their ethanol processing fluid while also using phytase. *See, e.g.*, PTX 97 (noting that Aemetis adds approximately 200–300 gallons of sulfuric acid

burden of proof for infringement lies with U.S. Water, no reasonable jury could conclude that reduced formation of phytate deposits is accomplished substantially by phytase, and not by some other technique, such as the application of sulfuric acid.

Second, Mr. Dorn admitted that it is “very common practice” to add air to the fermenter or yeast propagator of fuel ethanol plants, and further that the oxygen in air is an oxidizer. Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 59:10–20, 60:18–20; Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 14:3–6. Mr. Dorn also testified that other oxidizers, such as hydrogen peroxide, sodium chlorite, and Fermasure (which acts as an oxidizer below pH 5.5), are used in fuel ethanol plants. Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 59:21–23, 61:13–15; Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 16:20–17:1. Although Mr. Dorn testified that plants add such oxidizers for reasons other than fouling reduction, such as for the benefit of yeast or to treat bacterial contamination, the purpose for which these compounds are added is irrelevant to the question of whether this claim limitation is met. *See, e.g.*, Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 59:12–60:9. Mr. Dorn’s own testimony establishes that plants that continue to add sulfuric acid do so in the presence of an oxidizer, and provides no evidence (apart from his assumption) that this combination does not play a significant role in reducing formation of phytate deposits. Accordingly, no reasonable jury could find, based on the evidence of record, that addition of sulfuric acid and an oxidizer does not contribute to reduced formation of phytate deposits at the eight named plants.

daily); Dkt. No. 761, Dakota Ethanol (Gerry) Dep. Tr. at 33:21–34:9, 103:14–15, 104:19–105:6, 136:22–24; Dkt. No. 762, Nesika (Reynolds) Dep. Tr. at 53:19–22; *see also id.* at 54:24–55:18, 55:19–57:23.

b. U.S. Water Relies on Plant Data that Pre-Dates the Issuance of the Asserted Patents

Like its inducement evidence, *see supra* at 9–10, U.S. Water’s direct infringement evidence for both the “substantially by phytase” and “pH 4.5 or higher limitations” mostly pre-dates the issuance of one or both of the asserted patents. *See* Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 15:21–16:6 (Dorn). In particular, Mr. Dorn relied on data provided by Kansas Ethanol, Dakota Ethanol, and Calgren that is limited to their use of Phytaflow for short periods of time in 2012; no post-issuance data was introduced for any of these three plants. PTX 887 & PTX 889 (pH and sulfuric acid usage for Kansas Ethanol from February to March 2012); PTX 884 (pH data¹⁴ for Dakota Ethanol from May 19, 2012 to July 31, 2012 and from November 5, 2012 to November 30, 2012); PTX 881 & PTX 883 (pH and sulfuric acid usage data for Calgren from April 12, 2012 to May 31, 2012). Mr. Dorn also relied only on pH and sulfuric acid data for GLEM that pre-dates the issuance of the ’399 patent. PTX 885.

A patent cannot be infringed by acts done before its issuance. *Rhodia Chimie v. PPG Indus. Inc.*, 402 F.3d 1371, 1382 (Fed. Cir. 2005). While evidence of pre-issuance conduct *may* be relevant to establishing that post-issuance conduct infringes, *id.*, no reasonable jury could find that U.S. Water proved such evidence was relevant here.

As an initial matter, Mr. Dorn justified his reliance on pre-issuance data by citing deposition testimony from representatives of the fuel ethanol plants, noting in particular testimony from Mr. Combs of Kansas Ethanol:

¹⁴ As explained above, Mr. Dorn testified that his opinion as to infringement by Dakota Ethanol (among other plants) was not based on any sulfuric acid usage data for that plant. *See supra* at 28. What evidence exists in the record shows that Dakota Ethanol continued to add substantial quantities of sulfuric acid to ethanol processing fluid while also using phytase. *See supra* at 28–29 n.13.

Q. So some of the pH and sulfuric acid data – usage data that you got was reviewed – and reviewed was from prior to the issuance of the patents; is that correct?

A. That is correct.

Q. And are you comfortable relying on that data in forming your opinions today?

A. So based on the deposition testimony, I'm comfortable with that in all cases that we asked the plants, the people that were telling us how their plant worked, that they continued to use Phytaflow – in fact, this is a snippet from Thane Combs.^[15] They're continuing to use it. They're continuing to use it just like they had before, including, you know, in some cases the same dosage, same procedure, and not adding acid. So we got confirmation from every plant we were able to depose that they were consistently doing the same thing of the data set that they provided. So I feel comfortable with that.

Dkt. No. 815, Trial Tr. (Oct. 11, 2017 p.m.) at 73:3–18. But in point of fact, such testimony was *not* obtained from all plants having only pre-issuance data. For example, U.S. Water did not even attempt to depose a representative of GLEM. As for the testimony cited by Mr. Dorn, Mr. Combs indicated only that Kansas Ethanol continued to add Phytaflow to fermentation at the same dosage as in 2012—not that pH levels and sulfuric acid usage had remained the same since 2012:

Q. And you still use Novozymes' Phytaflow product; correct?

A. Yes.

Q. And you've used – have you used it continuously at least since February 1st, 2012?

A. Yes.

Q. Okay. And you're still adding it to the fermenter?

A. Yes.

Q. Are you still adding it at a rate of two-and-a-half gallons?

A. I believe we are, to the best of my knowledge.

Q. *And you're still using it in the same way as you used in the trial of the 50161 product?*

A. *Same way as in same location, same time frame?*

¹⁵ Mr. Dorn appears to be referencing a demonstrative slide (Demo 2.69) quoting from Mr. Combs' deposition transcript (Dkt. No. 759) at 85:19–86:16.

Q. *Okay.*

A. *That's correct.*

Dkt. No. 759, Kansas Ethanol (Combs) Dep. Tr. at 85:19–86:12 (emphasis added); *see also* Dkt. No. 761, Dakota Ethanol (Gerry) Dep. Tr. at 135:21–136:2 (testifying that Dakota Ethanol continued to use Phytaflow “in the same way”). When asked explicitly whether Kansas Ethanol used the same amount of sulfuric acid in 2014 as in 2012, Mr. Combs was unable to answer.

Dkt. No. 759, Kansas Ethanol (Combs) Dep. Tr. at 56:6–56:14.

Mr. Dorn’s reliance on pre-issuance data is especially problematic given the substantial evidence—including U.S. Water’s own admissions, *see supra* at 25—of variability in plants’ use of sulfuric acid and other operating parameters over time. Specifically, Mr. Dorn cannot reliably extrapolate from pre-issuance Phytaflow use that each plant subsequently met or continued to meet the “pH 4.5 or higher” and “substantially by phytase” limitations. For example, a fuel ethanol plant may adjust its target pH and sulfuric acid usage in different parts of the process based on a decision to use a different or additional enzyme or process additive, or to address bacterial contamination, or to account for a change in the grain source. *See supra* at 24, 25 (discussing testimony from Dr. Kohl, Mr. Dorn, and U.S. Water’s admissions); *see also* Dkt. No. 762, Nesika Energy (Reynolds) Dep. Tr. at 104:15–105:14 (observing that increased use of milo relative to corn increases fouling). And several plant representatives testified that one could not reliably use data relating to their plant operations from one period of time to draw conclusions about pH conditions during a different period of time. Dkt. No. 762, Nesika Energy (Reynolds) Dep. Tr. at 127:15–128:2, 128:5–129:14 (“You’d have to have data, but you can’t – you just can’t make assumptions to say – to guess what [the pH numbers] are, no.”); Dkt. No. 761, Dakota Ethanol (Gerry) Dep. Tr. at 149:17–24 (testifying that in the absence of data, any discussion of plant pH levels “would be speculation”); *see also* DTX 2151 at 028 (U.S. Water

admits that whether, where, and how much sulfuric acid to add varies from plant to plant); *id.* at 029 (U.S. Water admits that whether, where, and how much to vary pH and what the target pH values are for any particular area of a plant varies from plant to plant); Dkt. No. 824, Trial Tr. (Oct. 16, 2017 p.m.) at 163:1–165:20 (Bly).

U.S. Water failed to collect the evidence needed for Mr. Dorn to evaluate whether Kansas Ethanol, Dakota Ethanol, and Calgren did or did not meet the “pH 4.5 or higher” and “substantially by phytase” claim limitations after both asserted patents issued, and failed similarly as to GLEM following issuance of the ’399 patent. Mr. Dorn simply assumed that the pH of the fluid entering the beer column, or the amount of sulfuric acid used by a plant, would remain the same from day to-day or from month-to-month or even year-to-year. Accordingly, no reasonable jury could find that Kansas Ethanol, Dakota Ethanol, Calgren, and GLEM directly infringe the asserted claims based on pre-issuance data.

c. Calgren and Dakota Ethanol Do Not Practice the “pH 4.5 or Higher” Limitation

The “pH 4.5 or higher” limitation appears in all asserted claims of the ’137 patent, and in claims 2, 16, and 18–20 of the ’399 patent. DTX 2001; DTX 2002. The Court construed this limitation to mean that “the pH must be 4.5 or higher at some point during production,” and the jury was accordingly instructed that “the pH of the ethanol processing fluid in the beer column must be 4.5 or higher at some point during production of ethanol.” Dkt. No. 561, Summary Judgment Order at 14; Dkt. No. 803, Post-Trial Jury Instructions at 6.

U.S. Water’s evidence demonstrated that at least two of the named plants, Calgren and Dakota Ethanol, *did not* meet the “pH 4.5 or higher” limitation during certain periods of Phytaflow usage for which they provided data. Not only does the data from these plants pre-date the issuance of both asserted patents as described above, but the plant data also indicates that

Calgren and Dakota Ethanol maintained a pH *below* 4.5 for the majority of the time that they were using Phytaflow—and for the entirety of certain reported intervals of Phytaflow use. *See* PTX 884 (showing that Dakota Ethanol maintained a beer well pH below 4.5 from May 19 – July 31, 2012, and largely below pH 4.5 from November 5–30, 2012); PTX 881 (showing that Calgren maintained a beer feed pH below 4.5 from April 12 – May 31, 2012); *see also* Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 17:9–18:20 (Dorn).

As explained above, substantial variability exists in the operating parameters plants may choose to use over time. *See supra* at 24, 25, 32–33. Moreover, Mr. Dorn admitted that plants generally “have the authority and flexibility to run” at whatever pH “was best for their operation,” and that Calgren and Dakota Ethanol can and did choose to operate with a beer column pH below 4.5 while using Phytaflow. Dkt. No. 829, Trial Tr. (Oct. 12, 2017 a.m.) at 17:17–18:3, 18:10–20. Indeed, Dakota Ethanol’s representative testified that the plant “[r]egularly” and “continuously” optimizes its processes to enhance products and efficiency, and thus make the plant “successful.” Dkt. No. 761, Dakota Ethanol (Gerry) Dep. Tr. at 145:13–17. Such optimization includes adjustment of pH targets and sulfuric acid usage. *Id.* at 145:18–24. Accordingly, no reasonable jury could find that Calgren and Dakota Ethanol directly infringe the asserted claims of the ’137 patent and claims 2, 16, and 18–20 of the ’399 patent during the relevant time period.

In sum, judgment as a matter of law of no direct infringement is appropriate as to the “substantially by phytase” claims for all Phytaflow customers (named and unnamed), and as to the “pH 4.5 or higher” claims, which were asserted only against the named plants, as to at least Calgren, Dakota Ethanol, Kansas Ethanol, and GLEM.

III. IN THE ALTERNATIVE, NOVOZYMES IS ENTITLED TO A NEW TRIAL ON THE ISSUES OF INDUCED AND CONTRIBUTORY INFRINGEMENT

Alternatively, a new trial should be granted on the issues of induced and contributory infringement. During trial, U.S. Water repeatedly told the jury that documents relating to a *non-*asserted patent, and created *before* the asserted patents issued, are evidence of Novozymes' intent with respect to those later-issued asserted patents. These arguments were legally and factually incorrect. Legally, it is impossible for Novozymes to have intended to induce or contribute to infringement of patent claims not yet in existence. Factually, the context shows that U.S. Water's arguments were misleading at best. Far from showing culpable intent, the evidence makes clear that Novozymes intended to *not* tread on U.S. Water's patent rights.

Although U.S. Water was permitted to make its arguments to the jury, the same cannot be said for Novozymes. Novozymes was precluded from presenting critical context regarding the evidence U.S. Water relied on to show intent, even when that context was found in the *exact same document* U.S. Water used to show intent. Novozymes was also precluded from offering mitigating evidence relating to its pre-Phytaflow launch investigation of the patent landscape and pre-suit communications between itself and U.S. Water. As a result, the jury only heard U.S. Water's selective presentation of evidence and insinuations on the key issue of intent. Novozymes is entitled to a new trial on the issues of induced and contributory infringement.

A. Legal Standard for a New Trial

A motion for a new trial under Rule 59 is directed to the discretion of the Court, which may grant a new trial on any issue if "the verdict is against the weight of the evidence" or "if for other reasons the trial was not fair to the moving party."¹⁶ *Shick v. Ill. Dep't of Human Servs.*,

¹⁶ A Rule 59 motion raises "procedural issue(s) not unique to patent law," and is therefore reviewed under the law of the regional circuit rather than under the law of the Federal Circuit. *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1361 (Fed. Cir. 1999); accord *Leader*

307 F.3d 605, 611 (7th Cir. 2002) (quotation omitted). A new trial based on an evidentiary error is warranted where that error had “a substantial influence over the jury” such that “the result reached was inconsistent with substantial justice.” *Id.* (quotations omitted) (concluding that district court abused its discretion in refusing to grant new trial on plaintiff’s sex discrimination claim following post-trial dismissal of plaintiff’s disability discrimination claim, as it was “hard to imagine” how a jury could have reached its verdict “without the extensive testimony about the abusive treatment regarding [plaintiff’s] many ailments”); *see also Cerabio LLC v. Wright Med. Tech., Inc.*, 410 F.3d 981, 994 (7th Cir. 2005) (finding district court’s blanket exclusion of evidence improper and ordering new trial as the exclusion had prevented defendant from presenting “a fundamental piece” of evidence that went to the “heart of the defense”). An evidentiary error satisfies that standard “if a significant chance exists” that the error “affected the outcome of the trial.” *Shick*, 307 F.3d at 611.

B. The Jury’s Finding of Inducement Was Tainted by Admission of Pre-Issuance Evidence Regarding the ’244 Patent, Which Is Not Asserted in this Case

The only two patents at issue in this case are the ’137 and ’399 patents. U.S. Water has never contended that the related ’244 patent (DTX 2000), which issued before either the ’137 patent or the ’399 patent, is infringed by use of Phytaflow to reduce the formation of phytate deposits in fuel ethanol plants. Nor could it have; every claim of the ’244 patent requires that phytase be added *after fermentation*, whereas Novozymes explicitly instructs its Phytaflow customers to add the product only *during fermentation*. Yet despite the fact that U.S. Water has never contended that Novozymes induces infringement of the ’244 patent, U.S. Water relied on evidence pertaining to that earlier patent to establish intent to induce or contribute to

Techs., Inc. v. Facebook, Inc., 678 F.3d 1300, 1305 (Fed. Cir. 2012) (reviewing denial of motion for a new trial under regional circuit law).

infringement with respect to the '137 and '399 patents. As such evidence pre-dates the issuance of the '137 and '399 patents in April and December of 2013, respectively, as a matter of law it cannot be used to establish intent. *See supra* at 9–10. For this reason alone, a new trial is necessary.

But the prejudice to Novozymes runs much deeper than the mere admission of legally irrelevant evidence. For in relying on evidence pre-dating issuance of the asserted patents, U.S. Water affirmatively misled the jury as to its significance. What should have been evidence of the careful and deliberate steps that Novozymes took to avoid infringement of the earlier '244 patent was instead alleged to be proof of Novozymes' reckless and deliberate intent to induce or contribute to infringement of the asserted patents. In this way, U.S. Water's misleading use of the evidence tainted the entire liability phase, calling into question the jury's verdict and necessitating a new trial.

The bulk of the evidence on which U.S. Water relied to show inducement pre-dates the issuance of the asserted patents. These documents reflect communications among Novozymes employees or with Novozymes customers from 2009 to 2012. *See* PTX 12; PTX 64; PTX 69; PTX 86; PTX 87; PTX 88; PTX 158. Setting aside the fact that this evidence pre-dates the asserted patents, most of these documents merely show that various Novozymes employees were aware of U.S. Water's pHytOUT product. *See* PTX 64; PTX 69; PTX 87; PTX 88. And because the communications pre-date the asserted patents, even those that do mention U.S. Water's patent rights refer only to the '244 patent or its corresponding patent application, *not* the '137 or '399 patents. *See* PTX 12; PTX 86; PTX 158. This evidence does not and cannot show intent to induce infringement.

U.S. Water's use of PTX 158 is illustrative. In this April 2012 e-mail correspondence between Novozymes sales representative Gary Johnson and Dakota Ethanol, Mr. Johnson initially asked whether the plant would be interested in trialing "phytase in fermentation to prevent fouling." PTX 158 at DAK 00050. After the plant operations manager Leon Gerry expressed interest, *id.*, Mr. Johnson provided a link to the '244 patent,¹⁷ observing:

Our phytase product NS50161 is in the commercial plant testing stage and so we do not yet have Application Literature available. This concept was first patented by U.S. Waters and I have provided you with a link to their patent and a copy of it which explains the science behind how it prevents fouling. You may notice in the patent that their application calls for use after fermentation. Our patent attorneys, and other competitors have concluded that Phytase use during fermentation is not covered in the patent which opens the door for competing Phytase products to legally be used in fermentation where it works well.

Id. at DAK 00048–49 (underlining added).

As an initial matter, as the e-mail correspondence between Mr. Johnson and Mr. Gerry occurred in April 2012, prior to issuance of the '137 and '399 patents, for the reasons already explained PTX 158 cannot be used to establish intent to induce or contribute to infringement under controlling Federal Circuit law. Yet during trial, U.S. Water used PTX 158 as its "smoking gun" for intent. Beginning with opening statements, counsel for U.S. Water explicitly called out PTX 158 as evidence that would be presented to prove induced infringement:

Could you bring up PTX 158 for me?

This is a note from Novozymes to one of its customers. "Our phytase product NS50161" – that became Phytaflow – "is in the commercial plant testing stage" – this is 2012, five years after U.S. Water filed for its patent – "and so we do not yet have application literature available. The concept was first patented by U.S. Waters, and I have provided with you [sic] a link to their patent and a copy of it which explains the science behind how it prevents fouling." We don't have instructions yet, just use this. *Just take the patent.*

¹⁷ The link is to U.S. Pub. No. 2009/0104685, the published patent application that later issued as the '244 patent.

Dkt. No. 814, Trial Tr. (Oct. 10, 2017 p.m.) at 32:7–16 (emphasis added). And in closing arguments, PTX 158 again played a starring role:

. . . You know, sometimes in these cases, it can be tough to find evidence of induced infringement. You're pretty smart. You don't always leave it out there. You really have to dig deep between the lines. And sometimes people just spill it all over the emails, all over the documents, and they leave no doubt about what's going on, and this is one of those times.

Could you please bring up PTX 158. In 2012, this is five years after U.S. Water first filed for a patent application that resulted in these patents, *this is what Novozymes tells its customers when it's trying to get them to first start out using Novozymes's replacement Phytaflow product.* “Our phytase product NS 50161 is in the commercial plant testing stage and so we do not yet have application literature available. This concept, using phytase to reduce deposits, was first patented by U.S. Water, and I have provided you with a link to their patent and a copy of it which explains the science behind how it prevents fouling.”

Dkt. No. 826, Trial Tr. (Oct. 18, 2017 a.m.) at 39:9–40:2 (emphases added). Counsel for U.S.

Water repeated the sentiment yet again in rebuttal, observing with respect to PTX 158: “I am not trying to be [sic] beat a dead horse on this one, but it just does not get any more clear.” *Id.* at 110:6–18.

While U.S. Water’s counsel repeatedly cited the same two lines from PTX 158 in both opening and closing, strikingly absent from these repeated references were the statements that followed (the two underlined sentences in the passage quoted above, *supra* at 38), let alone that the subject of the correspondence was neither of the two patents at issue in the case. The omitted statements explained that Novozymes had conducted an analysis of the ’244 patent, the only U.S. Water patent to have issued at that time, and concluded that addition of phytase to fermentation would not infringe its claims. By selectively quoting from this correspondence and omitting the surrounding context, U.S. Water created the impression that Novozymes was aware of the two patents at issue in the case *and did not care*. And of course, by not clarifying that Mr. Johnson was discussing the ’244 patent, whose claims are limited to phytase addition after fermentation,

U.S. Water effectively misled the jury into believing that the patent rights at issue were those of the '137 and '399 patents.

Compounding the prejudice of U.S. Water's extensive reliance on this irrelevant pre-issuance evidence, Novozymes was denied the ability to present that necessary context to the jury. Such necessary context would have included at least a discussion of what the '244 patent is, when it came into existence, and what it covers, in addition to Novozymes' belief that the claims of the '244 patent could not be infringed by adding phytase during fermentation.

For example, in preparation for direct examination of Novozymes employee Jack Rogers, counsel for Novozymes asked that Mr. Rogers be permitted to clarify the issues surrounding PTX 158 and the '244 patent. *See* Dkt. No. 823, Trial Tr. (Oct. 13, 2017 a.m.) at 53:21–54:1, 55:4–23, 57:12–58:10. The Court indicated that Mr. Rogers could testify regarding “[Novozymes’] response to the patents,” including the fact that the '244 patent is limited to the addition of phytase after fermentation. *Id.* at 58:18–59:2; *see also id.* at 59:3–6 (stating that Mr. Rogers may not testify regarding a freedom-to-operate analysis or the patents' validity). But during his direct examination, Mr. Rogers was prevented from doing so. Although Mr. Rogers was able to testify to the dates of issuance of the '137 and '399 patents, and that they had not issued at the time of the correspondence in PTX 158, Mr. Rogers was not allowed to explain that the '244 patent is limited to the addition of phytase after fermentation, and that Novozymes therefore did not believe those claims to be infringed. Dkt. No. 816, Trial Tr. (Oct. 13, 2017 p.m.) at 16:23–20:13. Moreover, when counsel for Novozymes attempted to elicit that information, the jury was instructed to disregard Mr. Rogers' quotation of the pertinent statements from PTX 158 that provided the necessary context:

Q. Now, Mr. Gary Johnson refers to – refers Dakota Ethanol to a link to something he describes as a “patent” which he says “explains the science

behind how it prevents fouling,” and you understand this is a link to U.S. Water’s patent, correct?

A. I do.

Q. He goes on to say, “You may notice in the patent their application calls for use after fermentation. Our patent attorneys and other competitors have concluded that phytase use during fermentation is not covered in the patent, which opens the door for competing phytase products to be – to legally be used in fermentation where it works well.”

Ms. Nero: Your Honor –

The Court: Sustained.

Ms. Nero: Can we strike the portion –

The Court: The jury will disregard that last bit of testimony.

Id. at 17:13–18:4. That context was critical to counter U.S. Water’s arguments that PTX 158 is evidence of Novozymes’ culpable intent, when in fact the opposite is true. Nor did the Court grant Novozymes’ subsequent request for a corrective instruction clarifying the scope of the ’244 patent claims. *See* Dkt. No. 782, Novozymes’ Request for a Corrective Instruction; Dkt. No. 830, Trial Tr. (Oct. 16, 2017 a.m.) at 4:6–13 (the Court stating that it would provide a version of Novozymes’ proposed instruction at a later time); Dkt. No. 825, Trial Tr. (Oct. 17, 2017 p.m.) at 23:17–25:22 (the Court declining to issue an instruction regarding the scope of the ’244 patent claims).

U.S. Water’s arguments, combined with the Court’s evidentiary rulings and the Court’s decision not to issue a sufficient corrective instruction, limited Novozymes’ ability to present its case and compromised the jury’s ability to fairly assess the critical issue of intent. Indeed, for nearly all of the liability phase, the jury simply had no way of knowing that the “patent” referred to in PTX 158 and other similar Novozymes documents was a different patent with different claims than the asserted patents. And when Novozymes attempted to provide evidence clarifying the context for this communication, the jury was instructed to disregard that evidence. Yet such evidence should not have been controversial, as the scope of the ’244 patent is not in dispute.

See U.S. Water Servs., Inc. v. ChemTreat, Inc., No. 11-CV-0895 PJS/TNL, 2013 WL 173736, at *2 (D. Minn. Jan. 16, 2013) (“[T]he [’244] patent is clear that it covers only methods that involve adding phytase after fermentation.”), *aff’d*, 794 F.3d 966 (8th Cir. 2015); *see also* DTX 2181 (unadmitted) (same); Dkt. No. 561, Summary Judgment Order at 5 (noting that the “scope of the claims of the ’244 patent was previously litigated,” and that for “purposes of this case it is thus established that the ’244 patent claims only the addition of phytase after fermentation”). U.S. Water itself has acknowledged this construction, and has never accused Novozymes of infringing the ’244 patent. *See* Dkt. No. 204, U.S. Water Summary Judgment Br. at 15 (acknowledging that the *ChemTreat* court construed the ’244 patent as limited to the addition of phytase after fermentation); *see also id.* at 22 (“The applicants’ claims in the ’244 patent were expressly limited to one embodiment in which phytase is applied after fermentation to ‘thin stillage, backset or a mixture of these fluids.’”).

Because U.S. Water was allowed to rely so heavily on communications about the non-asserted ’244 patent, the evidence of inducement and contributory infringement regarding the ’137 and ’399 patents “was tainted beyond repair, absent a new trial.” *See Shick*, 307 F.3d at 614 (finding that it was error to permit substantial evidence of *disability* discrimination when the jury was ultimately tasked with assessing a different claim, *sex* discrimination, for which there was less evidence). In that new trial, if granted, U.S. Water should be precluded from arguing that Novozymes possessed a specific intent to induce or contribute to infringement before the asserted patents had issued and should be precluded from relying on pre-issuance evidence, particularly evidence that reflects Novozymes’ assessment of U.S. Water’s ’244 patent.

C. The Admission of Pre-Issuance Correspondence Regarding the '244 Patent Was Particularly Prejudicial Given the Exclusion of Novozymes' Mitigating Evidence

The Court also precluded Novozymes from offering mitigating evidence showing its lack of intent to induce or contribute to infringement of the asserted patents. Particularly given U.S. Water's reliance on pre-issuance evidence relating to a different patent to establish such intent, the exclusion of the following mitigating evidence was improper, unfair to Novozymes, and very likely had a significant impact on the outcome of the trial.

1. Evidence of Novozymes' Freedom to Operate Analysis for Phytaflow

First, the Court excluded testimony regarding Novozymes' analysis prior to marketing Phytaflow of the relevant patent landscape. Specifically, the Court prevented Novozymes from offering testimony that its in-house legal team evaluates any concerns about the intellectual property rights of others before a new product is launched, and that Novozymes conducted that evaluation in this case before launching Phytaflow. Dkt. No. 827, Trial Tr. (Oct. 10, 2017 a.m.) at 14:24–15:20, 16:6–17. The Court also excluded Novozymes' evidence that it had “freedom to operate” in view of U.S. Water's patent applications and, later, the asserted patents.

The initial freedom to operate analysis memorandum (“FTO”) is dated February 17, 2011, prior to the first plant trial of NZ 50161 (later re-named “Phytaflow”). DTX 2834. The FTO analysis reflects (i) Novozymes' pre-litigation beliefs as to the scope of U.S. Water's anticipated patent claims in its then-pending patent application (which matured into the '244 patent); (ii) how Novozymes expected the claims to be construed; and (iii) whether Novozymes' existing methods of using phytase would fall within the scope of the anticipated claims. In particular, the FTO analysis considers the contents of U.S. Water's patent application and assesses the scope of the pending claims and those likely to issue. *Id.* at 006. The FTO analysis discusses the prior art, including Novozymes' own Veit patent application directed to the use of

phytase during fermentation in a fuel ethanol plant. *Id.* at 003. The FTO analysis concludes that Novozymes has freedom to operate because “the use of phytase during the fermentation step *does not infringe this patent family* as this is disclosed in our NZ10010 application published at the priority date of the U.S. Water Services patent application,” and further, that the pending claims in U.S. Water’s patent application are limited to the addition of phytase “after fermentation.” *Id.* at 008 (emphasis added).

After it prepared the initial FTO analysis, Novozymes circulated internal updates reflecting its beliefs as to the scope of issued and anticipated claims. On July 16, 2012, an update was circulated in response to a request for indemnification, and explains that Novozymes’ “old application (prior art) discloses what we promote.” *See* PTX 735 (unadmitted). On April 4, 2013, another update reported that U.S. Water pursued “broader claims” in a continuation patent (the ’137 patent), but the update went on to state that “[i]t is also our opinion that U.S. Water’s soon to be granted US [sic] patent is invalid over prior art.” *See* DTX 2848. A similar update was circulated on April 9, 2013 stating that the “infringement” situation for the ’137 patent was the same as for the ’244 patent. *See* DTX 2820 (unadmitted). On April 12, 2013, Novozymes circulated a further update reiterating its beliefs about what the ’137 patent can (and cannot) “cover,” including Novozymes’ previously disclosed methods. *See* DTX 2821.

Novozymes’ FTO-related evidence should not have been excluded during the liability phase of trial.¹⁸ As an initial matter, this evidence is directly relevant to negate a suggestion of intent to induce or contribute to direct infringement. In *Commil USA, LLC v. Cisco Systems, Inc.*, the Supreme Court held that a defendant’s belief that a patent is invalid “cannot negate the scienter required under § 271(b).” ___ U.S. ___, 135 S. Ct. 1920, 1928 (2015). However, *Commil*

¹⁸ DTX 2821, DTX 2834, and DTX 2848 were admitted into evidence during the damages phase only. PTX 735 and DTX 2820 were not admitted in either phase of the trial.

also confirmed that a defendant's reasonable beliefs about the *scope* of a patent *are* relevant to the scienter requirement for inducement of infringement because § 271(b) (and, by extension, contributory infringement under § 271(c)) "requires proof the defendant knew the acts were infringing." *Id.* The Court specifically addressed and *rejected* the argument that "even if the defendant reads the patent's claims differently from the plaintiff, and that reading is reasonable, he would still be liable because he knew the acts might infringe." *Id.*

Here, consistent with *Commil*, the FTO evidence reflects Novozymes' beliefs about the scope of U.S. Water's patents. Novozymes concluded that U.S. Water's patents could not encompass Novozymes' existing method of using phytase because the patents' specification (which cites Veit and incorporates Veit's U.S. counterpart by reference) did not describe any use of phytase before or during fermentation, and because Novozymes had publicly disclosed that method seven years earlier in the Veit patent application. This is directly relevant to whether Novozymes "knew" that the acts of its customers were infringing. *See id.* The evidence would have shown Novozymes' belief that it *could not* infringe U.S. Water's patent claims by practicing what it had previously disclosed because the scope of U.S. Water's patents *could not* read on that same, previously disclosed activity. The evidence would have further shown that Novozymes lacked intent to induce or contribute to others' infringement because it reasonably believed its customers were practicing an invention found in the public domain. *See Kinetic Concepts, Inc. v. Blue Sky Med. Grp., Inc.*, 554 F.3d 1010, 1024–25 (Fed. Cir. 2009) (declining to overturn jury's finding of no intent to encourage infringement, explaining that although plaintiff "may be correct that 'practicing the prior art' is not a defense to patent infringement . . . it does not follow that a defendant's belief that it can freely practice inventions found in the public domain cannot support a jury's finding that the intent required for induced infringement

was lacking”). Finally, the evidence would have shown *why* Novozymes instructs its customers to add phytase to fermentation; namely, because it understood U.S. Water’s patents to be limited to adding phytase “after fermentation.”

The Court ruled before trial that Novozymes’ FTO-related evidence was inadmissible under *Commil*. However, U.S. Water’s arguments *during* trial confirm that the evidence should have been admitted. As discussed above, U.S. Water’s evidence of inducement centered on Novozymes’ communications about the ’244 patent, not the ’137 or ’399 patents. *See supra* § III.B. In particular, U.S. Water suggested repeatedly that Novozymes’ statements regarding the ’244 patent demonstrate intent to induce infringement of U.S. Water’s patents. But Novozymes’ FTO-related evidence would have directly rebutted that insinuation, as it shows that Novozymes considered and rejected that very possibility. DTX 2834; *see also* DTX 2848; *Peals v. Terre Haute Police Dep’t*, 535 F.3d 621, 630 (7th Cir. 2008) (“The proper function of rebuttal evidence is to contradict, impeach or defuse the impact of the evidence offered by an adverse party.” (citations omitted)). Moreover, the excluded FTO evidence is relevant to rebut numerous other issues at trial, including U.S. Water’s suggestions that Novozymes copied its invention, that Novozymes does not respect the intellectual property rights of others, that Novozymes lacks an understanding of the fuel ethanol industry and of the particular technology in question, or that Novozymes was generally uninformed about the application of phytase in fuel ethanol processing.

Where, as here, the evidence is relevant for multiple purposes, the proper course of action would have been to admit the evidence subject to a limiting instruction. *See* Fed. R. Evid. 403 Advisory Committee’s Notes (explaining that a court should consider the effectiveness of a limiting instruction before excluding relevant evidence); Fed. R. Evid. 105 (permitting a court to

admit evidence while restricting the evidence to its proper scope using a limiting instruction); *see also ABS Global, Inc. v. Inguran, LLC*, No. 14-cv-503-wmc, 2016 WL 3996167, at *2 (W.D. Wis. July 22, 2016) (denying motion *in limine* and holding that evidence with at least “some relevance” can be addressed “during cross examination, argument and, if necessary, a limiting instruction”). No such limiting instruction was given, resulting in Novozymes’ evidence being excluded in its entirety. As such, a new trial is necessary in which the jury may consider this evidence. *See Cerabio*, 410 F.3d at 994 (ordering a new trial after a district court’s blanket evidentiary rulings “not only excluded evidence [regarding claims resolved on summary judgment], but also excluded legitimate evidence relevant to [defendant’s] defenses and surviving counter claims”).

2. Evidence of Novozymes’ Pre-Suit Communications with U.S. Water

The Court also precluded Novozymes from presenting evidence during the liability phase of pre-suit communications with U.S. Water.¹⁹ On May 30, 2012, U.S. Water’s outside counsel, Bruce Little, sent a letter to Novozymes. DTX 2281. Citing the ’244 patent, Mr. Little asserted that U.S. Water had patent rights broadly covering “reducing scale deposits in ethanol processing,” and demanded that Novozymes cease promoting Phytaflow as a “substitute” for U.S. Water’s product and making “false statements” about Novozymes’ existing patent. *Id.* Novozymes’ General Counsel, Charles Shapiro, responded on the company’s behalf on June 11, 2012. DTX 2283. Mr. Shapiro denied Mr. Little’s various allegations. He explained that Novozymes was offering a product only for use in fermentation, and cited the process disclosed in Novozymes’ Veit patent application as a way to describe what he believed was a permissible

¹⁹ DTX 2281 and DTX 2283 were admitted into evidence in the damages phase only.

use of phytase. *Id.* Mr. Shapiro also pointed out that the Veit patent application had been filed in 2000 and published in 2001. *Id.* U.S. Water never responded to Mr. Shapiro's letter.

These pre-suit communications are uniquely relevant because U.S. Water did not dispute Mr. Shapiro's discussion of U.S. Water's patent claim scope as compared to the method of phytase application Novozymes was instructing its customers to use. U.S. Water also did not object when Mr. Shapiro explained that Novozymes personnel confined themselves to statements about "Novozymes' phytase product and the benefits obtained by using Novozymes' phytase product in fermentation, a process described in a patent application filed by Novozymes in 2000 (published in 2001)." *Id.* Based on U.S. Water's silence in the face of Mr. Shapiro's statements, Novozymes could have fairly assumed (and did assume) that U.S. Water agreed with Mr. Shapiro's letter. These communications were directly relevant to the question of Novozymes' intent and were improperly excluded during the liability phase, warranting a new trial. *See Cerabio*, 410 F.3d at 994.

IV. CONCLUSION

For the foregoing reasons, Novozymes respectfully requests that this Court grant its motion for judgment of non-infringement as a matter of law. Alternatively, Novozymes requests that the Court grant a new trial on the issues of induced and contributory infringement.

Dated: November 22, 2017

Respectfully submitted,

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